

What is claimed is:

1. An electron microscope, comprising:
  - a main vacuum chamber housing a stage therein and connected to a vacuum pump;
  - 5 a load lock for loading specimen into said main chamber; and,
  - a mini-environment housing a minicolumn.
2. The electron microscope of claim 1, wherein said mini-environment comprises an opening to the main chamber for introducing and extruding said minicolumn into and from the main chamber.
- 10 3. The electron microscope of claim 1, wherein said mini-environment comprises a bellows structure for introducing and extruding said minicolumn into and from the main chamber.
- 15 4. The electron microscope of claim 1, wherein said mini-environment comprises an evacuation outlet.
5. The electron microscope of claim 1, wherein said mini-environment comprises 20 a second chamber having an opening into said main chamber, and a valve structure for hermetically sealing said opening.
6. The electron microscope of claim 5, wherein said valve comprises a sealing plate anchored to a pivot and movable in the Z-direction.

7. An electron microscope, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

8. 5 a load lock for loading specimen into said main chamber; and, a minicolumn positioned inside said main chamber.

9. 10 The electron microscope of claim 7, further comprising a back plate attached to said main chamber, and wherein said minicolumn is connected to the back plate.

10. 15 The electron microscope of claim 7, further comprising at least one tilted minicolumn situated inside said main vacuum chamber at a tilt with respect to the

minicolumn  
minicolumn

11. 20 10. The electron microscope of claim 9, wherein said tilt is variable.

11. The electron microscope of claim 7, further comprising a vacuum pump situated inside the main vacuum chamber and connected to the minicolumn.

20. 12. An electron microscope, comprising:

a main vacuum chamber connected to a vacuum pump and housing:

a turntable stage;

a holding arm; and,

a minicolumn attached to said holding arm.

13. The electron microscope of claim 12, further comprising a radial pivot, and  
wherein said arm is connected to said radial pivot.

5 14. The electron microscope of claim 12, further comprising a linear motion  
carriage, and wherein said arm is connected to said linear motion carriage.

10 15. The electron microscope of claim 12, further comprising at least one additional  
minicolumn connected to said holding arm.

16. The electron microscope of claim 15, wherein said at least one additional  
minicolumn has a tilt with respect to the minicolumn.

17. The electron microscope of claim 16, wherein the tilt is variable.

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